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BOARD OF PATENT APPEALS

MAR 28 2005

BOARD OF PATENT APPEALS
AND INTERFERENCES

In re: The Application of:

INVENTOR(S): Rodger Burrows

GROUP ART UNIT: 3622

SERIAL No.: 09/910,654

EXAMINER: Myhre, James W.

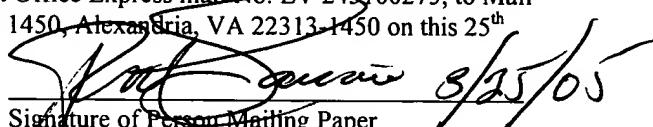
Appeal No. 2004-2110

FILING DATE: 7/20/01

TITLE: METHODS AND APPARATUS FOR ELECTRONICALLY STORING
TRAVEL AGENT COUPONS

CERTIFICATE OF MAILING

I HEREBY CERTIFY that this paper is being mailed, via U.S. Post Office Express mail No. EV 245100273, to Mail Stop: Board of Patent Appeals, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on this 25th day of March, 2005.


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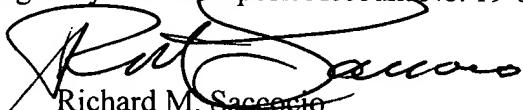
Transmitted herewith for filing in the above referenced application and appeal are:

TRANSMITTAL LETTER

Applicant Rodger Burrows Request to Reopen Prosecution
together with Exhibits 1, 2, 3, and 4, in triplicate.

Post card

The Commissioner is hereby authorized to charge any fees to Deposit Account No. 19-0010.


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IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex Parte Rodger Burrows

Appeal No. 2004-2110
Application No. 09/910,654

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MAR 28 2005

**BOARD OF PATENT APPEALS
AND INTERFERENCES**

REQUEST TO REOPEN PROSECUTION

In response to the Board's decision of January 25, 2005 and in accordance with 37 CFR § 41.50(b) (1), Applicant hereby request to reopen prosecution and submits this paper containing new evidence relating to the claims rejected

REMARKS AND NEW EVIDENCE

THE BOARD MISCONSTRUED APPLICANT'S INVENTION

In the decision of January 25, 2005, the Board overruled the Examiner's basis of rejection under 35 U.S.C. § 102 (f) and under 35 U.S.C. § 103 as based on the Friedes prior art. But then the Board entered a new ground of rejection under 35 U.S.C. § 103 stating that even though ARC does not disclose electronic storage of data as found by the Examiner, ARC discloses the storage of coupon data in optical form. Thus, the storage of coupon data electronically would have been obvious to the artisan in view of the teachings in ARC that the coupon data should be stored in optical form. The Board then stated that it was well known in the art to store image data in electronic form so that it could be transmitted over a communications channel such as a facsimile transmission or a multi-media network channel.

With all respect, it is submitted that the Appeal board has misconstrued Applicant's invention and what is being claimed by the Applicant in advancing the new basis of rejection under 35 U.S.C. § 103; in addition The Board has

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misinterpreted ARC's disclosure and Applicant's appeal arguments. In all probability, the misconstruction in part stemmed from the necessity of Applicant's appeal brief and reply brief to address the issues of rejection raised by the Examiner, i.e. the Examiner's rejection insisting that ARC was the inventor in advancing the storage of coupon data and not an optical image; and of course the Friedes reference. Both of which the Board emphatically overruled. In Appellant's Briefs, Applicant quoted the Examiner's stated basis of rejection based on the ARC disclosures and relied on by the Examiner. Applicant's brief also countered the Examiner's basis by quoting ARC's disclosures that contradicted those selected by the Examiner. The Examiner's quoted disclosures and Applicant's quoted disclosures in opposition as stated in Applicant's appeal briefs are incorporated herein by reference.

THE BOARD HAS MISCONSTRUED THE TEACHINGS OF THE PRIOR ART AND APPLICANT'S APPEAL ARGUMENT

In Applicant's appeal arguments, incorporated herein by reference, it was clearly and emphatically argued that ARC only disclosed the storage of an optical image of the agent coupon and not the electronic storage of agent coupon data. In its decision, the Board stated

Appellant responds that when all of the disclosures of ARC are considered as a whole, it is clear that ARC did not contemplate the electronic storage of agent coupon data (reply brief, pages 2-5, 7-11)

We will not sustain the Examiner's rejection of the claims under 35 § 102 (f). We agree with applicant that ARC, when considered in its entirety, only discloses that agent coupon data should be stored in optical form. The attempt by the Examiner to read electronic storage of coupon data into the ARC disclosure is based on pure speculation.",
(pages 5-6, emphasis supplied).

Applicant did not make the argument which the Board says it agrees to, i.e., that ARC only discloses that agent coupon data should be stored in optical form. As evidenced in Applicants brief and reply brief, Applicant argued that ARC disclosed the optical storage of the actual image of the agent coupon and not the electronic

storage of agent coupon data. Thus, Applicant's appeal argument centered on the distinction between two aspects: image and data; and, optical and electronic. Notwithstanding the misstatement of Applicant's appeal argument, the Board correctly reversed the Examiner's rejections. However, the misstatement of Applicant's appeal arguments which forms the basis of the new ground of rejection by the Board is not supported by the record. Clearly the only disclosure made by ARC is that the optical image of the agent coupon is to be stored; and, not that the agent coupon data should be optically stored. The Board has taken an unwarranted interpretation of Applicant's appeal arguments and ARC's disclosures and then used this unwarranted interpretations to arrive at its new ground of rejection. There is no support in the record to the Board's unwarranted interpretations and the Board does not attempt to provide such record support.

In furtherance of its decision, the Board later stated "We incorporate the findings made by the Examiner ...except for the finding that ARC discloses the electronic storage of coupon data." (page 11, lines 8-11) What other findings of the Examiner the Board incorporated in its decision is not spelled out. The Board further stated on page 11, lines 11-16, "Even though we found above that ARC does not disclose the electronic storage of coupon data as asserted by the Examiner [which argument the Applicant did make on appeal] we agree with the Examiner's position that the storage of coupon data electronically would have been obvious to the artisan in view of the teachings of ARC that coupon data should be stored in optical form." (emphasis supplied) Thus, while the Board agrees that ARC's disclosures do not in any way teach the electronic storage of coupon data, the Board advances that ARC's disclosure teaches optical storage of coupon data. This is a completely erroneous statement of the teachings of ARC. As argued in Applicant's appeal, the only teachings of ARC is to optically store the image of the agent coupon.

As noted above in Applicant's briefs, ARC consistently stated, that ARC's disclosure was to store the agent coupon in optical form. Again there are two aspects to ARC's disclosure, i.e., coupon image, and optical storage. Most importantly, Applicant's claimed invention does not involve a method where the image of the

agent coupon is generated from the prior art reservation system, nor where optical storage is used. Claim 1 recites coupon data and electronic storage of the data. The specific language of these claim limitations is in part critical to a determination of obviousness. The Board however, materially deviates from this specific language as follows where it stated,

...At the time the application was filed, it was well known in the art to store image data in electronic form so that it could be transmitted over a communications channel such as a facsimile transmission or a multi-media network channel. Thus, although ARC in its entirety seems to suggest an optical storage of image data, the artisan would have found it obvious to also store the image data in electronic form for subsequent reconstruction of the image.(Emphasis supplied), (page 11, lines 16- 21, page 12, lines 1-2)

Based on this statement by the Board, Applicant submits that the Board and the Examiner erroneously believe that Applicant's invention is the taking of a coupon image from the prior art reservation system and is applying the factors of obviousness to this step. The claimed invention, as shown in Figure 1, states that agent coupon data is generated from the prior art reservation system. Thus, the inventive method does not take an image from the prior art reservation system and store it.

Further, ARC never mentioned the words "image data." Therefore, the Board is inappropriately mixing words to arrive at its conclusion. It was Applicant who claimed the limiting words agent coupon data in claim 1, not ARC and not in the mixed manner stated by the Board. Simply stated, ARC's goal was to allow elimination of paper copies of the agent coupon but in its place store the optical image of the agent coupon. While on its face this goal is seemingly simple but in actuality it is not because unless an image exists it cannot be electronically stored as an image. The only way for the agent coupon to initially exist in accordance with the then agent reservation system was to print the agent coupon and then optically scan it. But this would be counter productive to ARC's disclosures and would require more from the travel agent than just storing the printed coupon. Yet, ARC wanted the image stored in an optical media, e.g. microfiche. It absolutely did not want the agent coupon data to be stored.

A conclusive showing as to what ARC disclosed in 2000 (at the time of the application) and in 2005 (at the present time) is shown in the applicable sections of the 2000 IAH and the 2005 IAH, Exhibits 1 and 2 respectively.

In the 2000 IAH handbook, Section 70.0, (Exhibit 1)ARC stated,

As an alternative to maintaining supporting documents in paper format, an agent may...maintain the required documents on microfiche/film or on an optical storage medium ...under the following conditions.

(1) The sales reports and all supporting documents must be copied to microfiche/film or to a non-magnetic optical medium that uses a "write once, read only" technology which will prevent overwritingHowever, computer hard drives, zip drives, floppy disks, magnetic tape, and other magnetic media are NOT acceptable.

(emphasis in the original)

In the 2005 IAH handbook, Section 70.0, (Exhibit 2)ARC stated,

As an alternative to maintaining supporting documents in paper format, an agent may...maintain the required documents on microfiche/film or on an optical storage medium ...under the following conditions.

(1) The sales reports and all supporting documents must be copied to microfiche/film or to a non-magnetic optical medium that uses a "write once, read only" technology which will prevent overwritingHowever, computer hard drives, zip drives, floppy disks, magnetic tape, and other magnetic media are NOT acceptable.

(emphasis in the original)

As can be seen, the 2000 and the 2005 handbooks read exactly the same. Thus, without doubt, ARC disclosed optical storage of the agent coupon—not electronic storage of agent coupon data, and not optical storage of the coupon image data. Data storage by any magnetic media was and is still prohibited.

THE PROBLEM FACED AND SOLVED BY THE APPLICANT

Realizing the futility and extra effort involved in ARC's disclosures, Applicant considered the ultimate objective to eliminate the necessity to print and store paper copies of the agent coupons and faced the problem of how to do so in a manner different from that suggested by ARC. Thus, the problem faced by the Applicant was

to eliminate the necessity to first print the agent coupon and then optically store it. Applicant's invention overcame this apparent inconsistent feat by the unique solution disclosed and claimed in the subject application which solution does not involve first printing the coupon and then optically storing it.

The problem faced by the inventor is one factor in determining the issue of obviousness. The problem faced by the Applicant was to achieve ARC's goal but not by using the method disclosed or suggested by ARC. In order to do this the Applicant invented the method involving the steps of generating agent coupon data simultaneously with the printing of the airline ticket while using the then available agent reservation system, and then storing the coupon data in electronic form and not in optical form.. In the prior art as explained in the specification of the application, the agent coupon was printed along with the printing of the airline ticket. In stead of printing and storing paper agent coupons, ARC wanted the image stored in an optical media, e.g. microfiche. It absolutely did not want the agent coupon data to be stored, see the ARC quotes in Applicant's appeal arguments . Accordingly in a direction away from ARC's teaching, the Applicant invented the method of generating agent coupon data by extracting the data from the prior art agent reservation system, as shown in Figure 1 of the drawings, during the time that the airline ticket was being printed. Then the generated coupon data was separated from the prior art reservation system, identified and the data was electronically stored for future printing in the exact form of a prior art agent coupon, all in a manner not previously known or suggested. Applicant's invention therefore achieves the ability to completely eliminate the printing of an agent coupon during the printing of an airline ticket and not storing an optical image of the coupon. Applicant's claimed invention further provides the ability to print an exact copy of the agent coupon at a future time from the stored data and not from a stored image of the coupon. In this regard, Applicant's claimed invention is completely different from ARC's disclosures or any suggestion in ARC's disclosures.

THE BOARD'S REFERENCES DO NOT TEACH APPLICANT'S INVENTION

Because the Board has misinterpreted ARC's teachings to be the optical storage of coupon data, it advanced that the prior art technology in facsimile transmissions is a prior art reference applicable to the issue of obviousness. In this regard, the Board has committed clear error. The facsimile reference might be applicable if Applicant had claimed the electronic storage of the image data as the Board mischaracterized ARC's disclosures. Applicant however has claimed the electronic storage of the coupon data. This is a distinction with a difference..

Applicant submits that the facsimile analogy is misplaced in that the technology involved in facsimile transmission is that of an image broken down to white and black bits of information each of which is transmitted as an image and not data. See attached Exhibit 3 being an article entitled "How Fax Machines Work", which exhibit is incorporated herein by reference. For the Board to find that the technology involved in Applicant's claimed invention was the same as a facsimile machine is therefore obviously erroneous.

The Board's other reference to storing image data in electronic form and transmitted using a multi-media network is not fully understood by the Applicant. The words "image data" are mutually exclusive. It is either an image or data, but not both. Moreover, the Board has not explained what is meant by image data being stored in electronic form. It is believed by Applicant that the Board is referring to transmitting data, either as raw data or incorporated in a document, from one computer to another using a network arrangement. If Applicant's understanding is correct, this example cited by the Board is also misplaced. Certainly data, raw or in a form, can be sent from one computer to another, but that is not the whole of the method claimed by Applicant. It is only one step of the method and the law is clear that a claim can incorporate elements of the prior art in a claim, but the invention as a whole as claimed must be considered in an obviousness issue. Nothing in the prior art which the Board has collectively labeled as "ARC" in combination with a multi media

network system suggests or teaches the step of generating the agent coupon data as shown in Figure 1 and stated in Claim 1. Thus, the Board's argument of obviousness does not address the whole of claim 1 and is legally insufficient.

THE BOARD HAS NOT MAKE A SHOWING OF A PRIMA FACIE CASE OF OBVIOUSNESS

While Applicant agrees in general with the law cited by the Board regarding a prima facie case of obviousness, it is submitted that the Board has failed to show a prima facie case of obviousness in accordance with the cited law. In the absence of a showing of a prima facie case of obviousness, an applicant is entitled to a patent, In re Rouffet, 149 F.3d 1350 (CAFC 1998). A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. The constituent factual findings for a prima facie case of obviousness are: 1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the prior art and the claimed invention, In re Greene, 1999 U.S. App Lexis 32002 (CAFC 1999).

In re Fine 837 F.2d 1071 (CAFC 1988) is another case applicable to the lack of showing of a prima facie case of obviousness by the Board. There the court reversed the Board's showing of prima facie case of obviousness. The court stated that the burden can only be satisfied by showing some objective teaching in the prior art or knowledge that is generally available to one of ordinary skill would lead that individual to combine the references. Then the court noted that both the Board and the Examiner baldly stated that the substitution was within the skill of the art but pointed to nothing suggesting the combination or provided support for the bald assertion.

It is well known that a ticket reservation system includes a main frame, a computer and a printer. It is also well known that the prior art ticket reservation system prints an airline ticket and then print an agent coupon. ARC's disclosures permits the travel agent to optically store the agent coupon which can only be done

after the agent coupon is printed and then allows the travel agent to discard the printed or paper copy of the agent coupon. As noted above, Applicant realized that ARC's disclosure or permission was in reality of little benefit to a travel agent. While eliminating the necessity to physically store paper agent coupons, it required the images to be scanned and then stored. Accordingly, Applicant sought to devise a method that both eliminated the need to store paper agent coupons and eliminated the need to print an agent coupon and then optically scan it and store the image. Applicant's claimed invention accomplishes these goals. In the specification, on page 4 lines 10-12, it is stated that the inventive method includes the data being obtained directly from the reservation system as shown in Figure 1. In other words, the coupon data is generated from the information stream from the reservation system, and since the reservation system, in the inventive method, does not print the agent coupon, the coupon data is generated from the reservation system flow of information. Claim 1 includes the limitation "generating agent coupon data simultaneously with the printing of an airline ticket". Figure 1 shows that the agent coupon data (13) is taken from the ticket reservation system (11). Inasmuch as ARC's disclosures in combination with the technology of a facsimile machine transmission and/or in combination with a multi media network transmission does not result in Applicant's claimed invention, a *prima facie* case of obviousness has not been shown by the Board's new basis of rejection.

In re Lee 277 F.3d 1338, (CAFC 2002), is yet another case applicable to the lack of showing of a *prima facie* case of obviousness by the Board. The In re Lee court held that the factual inquiry whether to combine references must be thorough and searching and that it must be based on objective evidence of record. The court further held that: the agency must articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made; omission of a relevant factor required by precedent is both legal error and arbitrary agency action; reasoned findings are critical to agency performance and judicial reliance on agency competency; general conclusions about what is common knowledge or common sense are not sufficient to support agency findings; common knowledge and common sense, even if assumed to derive from the agency's expertise,

do not substitute for authority when the law requires authority. With regard to the above holdings, the Court stated:

The need for specificity pervades this authority. See, e.g., In re Kotzab, 217 F.3d 1365, (Fed. Cir.2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); In re Rouffet, 149 F.3d 1350, 1359, (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. "); In re Fritch, 972 F.2d 1260, (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

In re Dembicazk, 175 F.3d 994 (CAFC 1999) the court also stated that the best defense against the subtle but powerful attraction of hindsight based obviousness is a rigorous application of the requirement for showing of the teaching or motivation to combine the prior art references. Here, the Board made no such rigorous showing of the teaching or motivation to combine the references cited. Rather the Board merely advanced a conclusory statement that the facsimile technology and the multi media networking technology was well known to store image data it would be obvious to store and transmit optical image data. Moreover, as a prelude to doing so, the Board made the non supported leap going from storage of an image to storage of image data in order to reach the stated conclusory statement..

In In re Lee the Board and Examiner baldly made a statement that no hint of suggestion is needed where common knowledge and common sense are involved. In the present case an equally bald statement is made by the Board in advancing its decision on obviousness. In its decision herein, the Board stated "thus, although ARC

in its entirety seems to suggest an optical storage of image data, the artisan would have found it obvious to also store the image data in electronic form..." (page 11, lines 20-21, page 12, lines 1-2) As noted above, ARC never disclosed or stated the mutually exclusive words "image data". More importantly, the Board baldly used the word "seems" with regard to what ARC suggests. In accordance with In re Lee, the word "seems" has no specificity to indicate what ARC suggests. Without specificity it is not possible for specific findings to exist. Indeed, the Board has not in accordance with In re Lee explained how one of ordinary skill in the art would have been motivated to select the references and to combine them, or would have selected these components for combination in the manner claimed to render the claimed invention obvious.

Here, the Board cited the art of facsimile machines and multi media networking as additional prior which in combination with ARC's disclosures renders Applicant's invention obvious. Notwithstanding that the Board has misinterpreted and misconstrued ARC's disclosures as explained above, the Board has not explained how the technology involved in that art functions to render Applicant's invention obvious as required by In re Lee. Then too, as Applicant explained herein, the operation of the facsimile transmission is different form Applicant's claimed method and the multi media citation at best only concerns the data transmission step of Applicant's claimed method. Thus, the Board's decision does not consider Applicant's invention as a whole and runs afoul of this well accepted principle of law.

The Board's decision makes no attempt define the level of ordinary skill in the art of the invention as required by Graham v. John Deere, 383, U.S. 1 (1966) and In re Greene, supra. This lack of determination is sufficient in and of itself to render the Board's decision clearly erroneous.

Accordingly, the Board's decision does not comply with the required factual findings for a *prima facie* case of obviousness. That is, the Board has not determined the scope and content of the prior art; the level of ordinary skill in the art; or, the differences between the prior art and the claimed invention, Graham v. John Deere; In re Greene, supra.

APPLICANT'S REBUTTAL TO THE BOARD'S FINDING OF OBVIOUSNESS

Notwithstanding that Applicant does not agree that the Board has made a showing of a *prima facie* case of obviousness, the following rebuttal is submitted.

35 U.S. § 103 is the ultimate controlling authority as interpreted by the Federal Circuit for the issue of obviousness, which in effect states that a person cannot obtain a patent if the subject matter of the invention is considered obvious to a person of ordinary skill in the art to which the invention pertains, *Graham v. John Deere*, *supra*. In assessing the issue of obviousness the factors to be considered are: 1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the prior art and the claimed invention, *Id.*

The prior art as stated by the Board are the ARC disclosures, the facsimile machine and a multimedia networking arrangement. As noted above, Applicant's position of the ARC disclosures is that paper agent coupons can be eliminated provided that an image of the agent coupon is optically stored. The Board's interpretation of the ARC disclosures is that optical storage of an agent coupon image data should be stored. With regard to these different interpretations of what the ARC disclosures teach or suggest, Applicant incorporates herein all of the above statements and arguments pertaining to this factor. Accordingly, Applicant submits that the Board's interpretation is unwarranted and not supported by the record. On the other hand, Applicant's interpretation of the scope and content of the ARC disclosures are as stated in the IAH handbook published at the time of the application as well as all of the statements made by Arc with regard thereto

"If you're using a type of optical storage media, we're talking about capturing the image of the coupon, not creating a database."

Allan Muten, ARC corporate communications director, as reported in the Travel Weekly News dated 6/20/2000 (doc. AM, Form PTO 1449)

Applicant submits that the above single quote by ARC and the consistent IAH statements of 200 and 2005, firmly put to rest any question of the interpretation of the ARC disclosures. Nothing could be more clear. Applicant's interpretation is correct,

the Board's is erroneous. In view of the only supportable interpretation of the ARC disclosures, the facsimile and multi media networking references cited by the Board are totally inapplicable or at the very best apply to one step of the Applicant's claimed invention, as explained above. In either event, the combination of the references do not teach or suggest Applicant's claimed invention; or in the alternative do not address Applicant's invention as a whole. Accordingly, the Applicant has rebutted the Board's determination of the scope and content of the prior art. Applicant has also shown that the differences between the prior art and the claimed invention do not support a finding of obviousness, see the above. (Applicant still maintains that the Board has not shown any authority to support a different conclusion, as explained above).

In its decision, the Board has not made any attempt to determine the factor regarding the level of ordinary skill in the art. Attached hereto as Exhibit 4 is a declaration of the Applicant that shows the history of his invention and that his level of skill in the art is superior to one of ordinary skill and.

The attached copies of the pertinent portion of the 2005 IAH (Exhibit 2) reveals that ARC is still disclosing the need to optically capture the image of the agent coupon as did the 2000 IAH (Exhibit 1) at the time of the application. Thus, it is shown that ARC and others, other than Applicant, have failed to make Applicant's invention for over 5 years based on ARC's disclosures. Even if the level of skill in the art is considered high, the failure of others to make Applicant's invention for at least 5 years based on ARC's disclosures evidences that a person of ordinary skill has not considered Applicant's invention obvious. That Applicant's invention has satisfied a long felt need is also shown by the years apart statements by ARC regarding the same optical storage of the image of the agent coupon disclosures by ARC.

Accordingly, a full and supportable determination of the Graham V. John Deere factors, as advanced herein leads to the only conclusion that Applicant's invention when taken as a whole, without the prohibited use of hindsight, was not obvious to a person of ordinary skill in the art to which the invention pertains, at the time of the application.

Rebuttal evidence is merely a showing of facts supporting the opposite conclusion and may relate to the Graham factors including the secondary considerations, *In re Plasecki*, 745 F.2d 1468 (CAFC 1984). If rebuttal evidence of adequate weight is produced. The holding of a prima facie case of obviousness is dissipated. Moreover, the Examiner must consider all of the evidence anew regardless of the strength or weakness of the prima facie case, *id.* In accordance with the above submitted evidence, Applicants submits that the showing, if any, of a prima facie case of obviousness is dissipated.

THE ARC DISCLOSURES TEACH AWAY FROM APPLICANT'S CLAIMED INVENTION

In the prior art as explained in the specification of the application, the agent coupon was printed along with the printing of the airline ticket. In stead of printing and storing paper agent coupons, ARC wanted the image stored in an optical media, e.g. microfiche. It absolutely did not want the agent coupon data to be stored, see the ARC Industrial Agents' Handbook quoted above and attached hereto as Exhibits 1 and 2, respectively. Accordingly in a direction away from ARC's teaching, the Applicant invented the method of generating agent coupon data by extracting the data from the prior art agent reservation system, as shown in Figure 1 of the drawings, during the time that the airline ticket was being printed. Then the generated coupon data was separated from the prior art reservation system, identified and the data was electronically stored for future printing in the exact form of a prior art agent coupon, all in a manner not previously known or suggested. Applicant's invention therefore achieves the ability to completely eliminate the printing of an agent coupon during the printing of an airline ticket and not storing an optical image of the coupon. Applicant's claimed invention further provides the ability to print an exact copy of the agent coupon at a future time from the stored data and not from a stored image of the coupon. In this regard, Applicant's claimed invention is completely different and away from ARC's disclosures or any suggestion in ARC's disclosures.

Moreover, as explained above, the Board's reference to Facsimile transmission is inapplicable in that said technology transmits an image and not data. The Board's reference to multi media networking also falls short of showing obviousness in that it may refer or be applicable to but one step in Applicant's claimed invention and not the invention as a whole.

With regard to an issue of obviousness a reference that teaches away is a significant factor to be considered in determining obviousness. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. In general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the relief sought by the applicant. In re Gurley, 27 F.3d 551 (CAFC 1994). Applicant submits that it is inconceivable to find that or reach any conclusion other than the 2000 and the 2005 IAH handbooks teach away from the path taken by Applicant. The path taken by applicant completely eliminates the need to print and then optically store the image of an agent coupon. ARC's disclosures do not render Applicant's claimed invention obvious.

CONCLUSION

The Board has not shown a prima facie case of obviousness in its decision; or in the alternative, and assuming without conceding that it has, Applicant has authoritatively, sufficiently and adequately rebutted the finding of obviousness. Applicant respectfully requests that Board reopen prosecution, remand the proceeding to the Examiner, and that The Examiner allow the application in its present form

Respectfully submitted,



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Dated March 24, 2005

Field Investigations and Fraud Prevention Program

Storage of Agent Sales Reports, Supporting Documents, and Sales Summaries on Microfiche/Microfilm or other Optical Storage Media

Section XIV of the Agent Reporting Agreement requires each ARC Agent to retain, for at least two years, a duplicate copy of each weekly sales report and all supporting documents, (i.e., the agent coupons, RENs, credit card charge forms, settlement authorization forms, calculator tapes, computer print-outs, sales summaries, voids, and other supporting documents). Most Agents satisfy this contractual requirement by maintaining these required documents in the agency location in "hard copy" paper form.

As an alternative to maintaining the sales report and supporting documents in paper format, an Agent may, upon prior written notice to, and written approval by ARC, maintain the required documents on microfiche/film or on an optical storage medium as specified below, under the following conditions.

- (1) The sales reports and all supporting documents must be copied to microfiche/film or to a non-magnetic optical medium that uses a "write-once, read-many" technology which will prevent overwriting the stored data (e.g., WORM technology). Certain non-volatile storage medium, such as CD-ROMs, optical disks, DVDs, and laserdisks, may be determined to be acceptable storage media. However, computer hard drives, zip drives, floppy disks, magnetic tape, and other magnetic media are NOT acceptable.
- (2) Each weekly sales report and all supporting documents stored on microfiche/film or on an optical storage medium must be accessible by an ARC representative or a carrier representative in accordance with the terms of section XIV of the Agreement.
- (3) A functional reader and copier for microfilm/fiche (and a PC and printer for use with an optical storage medium), which allows for the viewing and reproduction of the entire sales report and all supporting documents, must be available to an ARC representative or carrier representative at the site where the microfiche/film or optical copies are stored and maintained.
- (4) The records which are stored optically or on microfiche/film must be direct, complete, and accurate reproductions of the original sales reports, supporting documents and sales summaries, and easily read and reproduced without loss of clarity. Voided tickets, clearly marked as such, may also be

retained optically or in microfilm/fiche; be advised, however, that the Agent is ultimately responsible for the use of any supposedly voided or destroyed ticket. (See, section 12, page 3, of the 2000 Edition of the *Industry Agents' Handbook* for information concerning alternative procedures for maintaining records of voids)

- (5) All stored records must be indexed by sales period ending date so as to be readily accessible to an ARC representative or a carrier representative. Images stored optically also must be retrievable by agency code number, sales period ending date, ticket number and stock control number.
- (6) An Agent who wishes to maintain its records optically or on microfiche/film, shall submit to ARC, in the form prescribed, a written request by an owner or officer, and provide the following information: (a) the manner in which the records will be reproduced and the specific type(s) of storage media which the Agent proposes to utilize; and (b) the agency location(s) where the sales reports and supporting documents, and the reader(s) and copier(s) will be maintained. The Agent will be required to affirm that the records maintained are direct and accurate reproductions of the original records (i.e., reproductions of the original agent coupons, sales summaries, and other supporting documents). A copy of the "Request to Maintain Sales Reports on Microfiche/Film or Optical Media" may be obtained from ARC's Fax-Back Service (800-811-1608). Requests should be sent to ARC, 1530 Wilson Boulevard, Suite 800, Arlington, VA 22209-2448, Attention: Director - Field Investigation and Fraud Prevention.

[Note: The Agent Reporting Agreement requires Agents to maintain their sales reports and supporting documents for only two years; however, Agents should note that other entities, e.g., governmental or tax authorities, etc., may require such documents and records to be maintained for longer periods of time.]

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Field Investigations and Fraud Prevention Program

Audit Program

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- The proper reporting of air transportation sales and ancillary services issued on ARC traffic documents
- Accountability of ARC traffic documents
- Security of traffic documents and airline identification plates
- Proper issuance of ARC traffic documents
- Ownership verification

Agency records normally needed to conduct the audit include:

- Weekly sales summaries and supporting documents covering the past two years
- Related invoices, reservation cards and/or journals
- Voided traffic documents

Audits are assigned on the basis of information developed by ARC and/or received by ARC from carriers, the area banks and, to a lesser extent, other agents.

The auditor will give the Agent reasonable notice, appropriate to the circumstances, prior to commencing an audit. However, due to the nature of the audit function, scheduling logistics, and priorities, a specific time and date cannot always be arranged. The auditor is aware that an agency is engaged first and foremost in servicing its clients, and every effort is made to conduct the audit inconspicuously and without disruption of routine office business. The average audit takes about two days to complete, depending on the size of the agency. Arrangements should be made to provide the auditor with suitable work space in the agency.

In all cases, the auditors must identify themselves with a pictured identification card prior to commencing the audit. If there should be any doubt as to the person's identity, the Agent should call the ARC Audit Section at 703-816-8008, for verification. The auditor will also explain the scope of the audit and identify the documents to be reviewed. If the

auditor needs to copy certain documents, and copying equipment is not available in the agency, the Agent may accompany the auditor to make the needed copies.

The agency audit program calls for person-to-person contact with the Agent in his or her own place of business. The program's success is measured by its contribution toward the maintenance of a sound and uniform agency program and NOT by the number of violations discovered. The ARC auditors are trained professionals, who have complete knowledge of ARC rules and procedures. In addition, their daily exposure to various types of agency operations throughout the country has equipped them to assist many agents with improved record keeping techniques, reporting procedures, etc. For the vast majority of agents who intend to conduct their business in compliance with the ARC Agent Reporting Agreement, a visit by an ARC auditor can be a constructive and beneficial experience.

Fraud Prevention Program

ARC's fraud prevention investigators each have a minimum of 20 years experience in law enforcement before joining the ARC staff. They deal primarily with the theft and fraudulent use of ARC traffic documents and assist law enforcement agencies throughout the world in the investigation and prosecution of such cases. Suggestions on how agents can help minimize the theft of ARC traffic documents may be found in Section 70.2 of this handbook.

Storage of Agent Sales Reports Supporting Documents, and Sales Summaries on Microfiche/Microfilm or Other Optical Storage Media

Section XIV of the Agent Reporting Agreement requires each ARC Agent to retain, for at least two years, a duplicate copy of each weekly sales report and all supporting documents, (i.e., the agent coupons, RENs, credit card charge forms (UCCCFs), settlement authorization forms, calculator tapes, computer print-outs, sales summaries, voids, and other supporting documents). Most Agents satisfy this contractual requirement by maintaining these required documents in the agency location in "hard copy" paper form.

As an alternative to maintaining the sales report and supporting documents in paper format, an Agent may, upon prior written notice to, and written approval by ARC, maintain the required documents on microfiche/film or on an optical storage medium as specified below, under the following conditions.

- (1) The sales reports and all supporting documents must be copied to microfiche/film or to a non-magnetic optical medium that uses a "write-once, read-many" technology which will prevent overwriting the

EXHIBIT 2

stored data (e.g., WORM technology). Certain non-volatile storage medium, such as CD-ROMs, optical disks, DVDs, and laserdisks, may be determined to be acceptable storage media. However, computer hard drives, zip drives, floppy disks, magnetic tape, and other magnetic media are NOT acceptable.

(2) Each weekly sales report and all supporting documents stored on microfiche/film or on an optical storage medium must be accessible by an ARC representative or a carrier representative in accordance with the terms of Section XIV of the Agreement.

(3) A functional reader and copier for microfilm/fiche (and a PC and printer for use with an optical storage medium), which allows for the viewing and reproduction of the entire sales report and all supporting documents, must be available to an ARC representative or carrier representative at the site where the microfiche/film or optical copies are stored and maintained.

(4) The records that are stored optically or on microfiche/film must be direct, complete, and accurate reproductions of the original sales reports, supporting documents and sales summaries, and easily read and reproduced without loss of clarity. Voided traffic documents, clearly marked as such, may also be retained optically or in microfilm/fiche; be advised, however, that the Agent is ultimately responsible for the use of any traffic documents the Agent reported as voided or destroyed. (See, Section 12, page 3, of the *Industry Agents' Handbook* for information concerning alternative procedures for maintaining records of voids.)

(5) All stored records must be indexed by sales period ending date so as to be readily accessible to an ARC representative or a carrier representative. Images stored optically also must be retrievable by agency code number, sales period ending date, ticket number and stock control number. Agents using optical disk storage must be able to create an agent coupon image from the stored data on demand.

(6) An Agent who wishes to maintain its records optically or on microfiche/film, shall submit to ARC, in the form prescribed, a written request by an owner or officer, and provide the following information: (a) the manner in which the records will be reproduced and the specific type(s) of storage media which the Agent proposes to utilize; and (b) the agency location(s) where the sales reports and supporting documents, and the reader(s) and copier(s) will be maintained. The Agent will be

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Special Note for Agents that Report Sales Electronically Via IAR

(7) Agents that submit their sales reports electronically via Interactive Agent Reporting (IAR) are permitted to print agent coupon data on non-accountable stock (e.g., mini itinerary documents or plain paper). IAR agents may also have the option of sending the agent coupon data directly to a write-once, read-many, non-magnetic optical medium (e.g., CD ROM, etc). The optically stored images of the agent coupon data must be retrievable by agency code number, sales period ending date, and ticket number. Agents using optical disk storage must be able to create an agent coupon image from the stored data on demand.

Please note, however, that even though an IAR Agent may print the agent coupon data on non-accountable stock or plain paper, or send it to an optical medium, the Agent will be still be required to maintain a copy of each weekly sales report (including the agent coupon data printed on non-accountable paper or stored optically, the original paper copy of all agent coupons for manual traffic documents, and other supporting documents, e.g., UCCCFs) for a period of two years. The stock control number will not be a required data element for agent coupon data which is printed on non-accountable stock or stored in an optical storage medium. IAR agents who wish to store their sales reports on microfiche or an optical medium must follow all requirements in parts (1) through (6) of Section 70.0, except as otherwise noted here in part (7).

[Note: The Agent Reporting Agreement requires Agents to maintain their sales reports and supporting documents for only two years; however, Agents should note that other entities, e.g., governmental or tax authorities, etc., may require such documents and records to be maintained for longer periods of time.]

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How Fax Machines Work

by [Marshall Brain](#)

You can walk into nearly any office in the United States today, big or small, hi-tech or lo-tech, and you will find a fax machine. Connected to a normal phone line, a fax machine allows you to transmit pieces of paper to someone else instantly! Even with FedEx and e-mail, it is nearly impossible to do business without one of these machines today.



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In this article, you'll learn how a fax machine works its magic!

The Basic Idea

Fax machines have been around in one form or another for more than a century – Alexander Bain patented the first fax design in 1843 (see Science Line: Alexander Bain & the Fax Machine to learn more). If you look back at some of the early designs, you can get a very good idea of how they work today.

EXHIBIT 3

Most of the early designs involved a **rotating drum**. To send a fax, you would attach the piece of paper to the drum, with the print facing outward. The rest of the machine worked something like this:

- There was a small photo sensor with a lens and a light.
- The photo sensor was attached to an arm and faced the sheet of paper.
- The arm could move downward over the sheet of paper from one end to the other as the sheet rotated on the drum.

In other words, it worked something like a lathe.

The **photo sensor** was able to focus in and look at a very small spot on the piece of paper -- perhaps an area of 0.01 inches squared (0.25 millimeters squared). That little patch of paper would be either black or white. The drum would rotate so that the photo sensor could examine one line of the sheet of paper and then move down a line. It did this either step-wise or in a very long spiral.

To transmit the information through a phone line, early fax machines used a very simple technique: If the spot of paper that the photo cell was looking at were white, the fax machine would send one tone; if it were black, it would send a different tone (see How Modems Work for details). For example, it might have sent an 800-Hertz tone for white and a 1,300-Hertz tone for black.

At the receiving end, there would be a similar rotating-drum mechanism, and some sort of **pen** to mark on the paper. When the receiving fax machine heard a 1,300-Hertz tone it would apply the pen to the paper, and when it heard an 800-Hertz tone it would take the pen off the paper.

Modern Fax Machines

A modern fax machine does not have the rotating drums and is a lot faster, but it uses the same basic mechanics to get the job done:

- At the sending end, there is some sort of **sensor** to read the paper. Usually, a modern fax machine also has a paper-feed mechanism so that it is easy to send multi-page faxes.
- There is some standard way to **encode** the white and black spots that the fax machine sees on the paper so that they can travel through a phone line.
- At the receiving end, there is a mechanism that **marks** the paper with black dots.

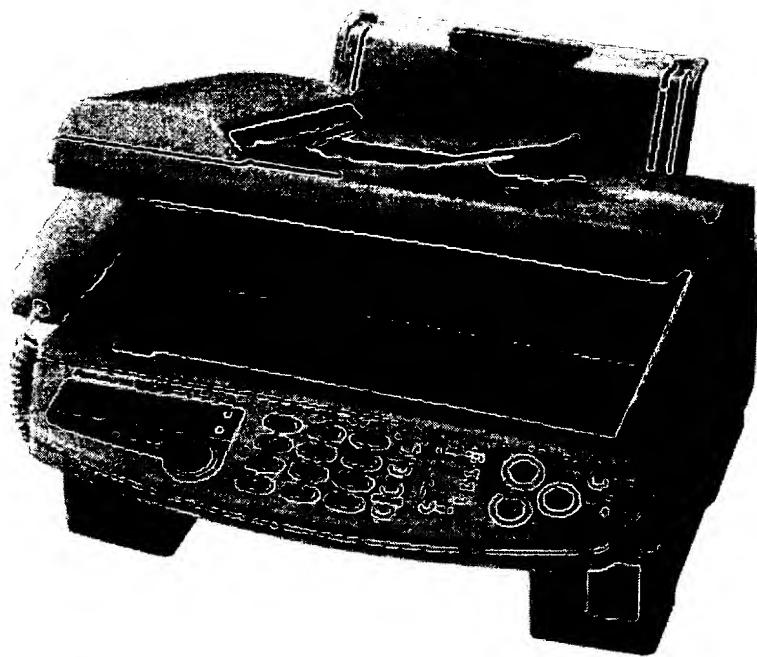


Photo courtesy **Panasonic** and **Matsushita** Electric Corporation of America
Panasonic KX-FB421 Fax/Copier machine

A typical fax machine that you find in an office is officially known as a **CCITT (ITU-T) Group 3 Facsimile machine**. The **Group 3** designation tells you four things about the fax machine:

- It will be able to communicate with any other Group 3 machine.
- It has a horizontal resolution of 203 pixels per inch (8 pixels/mm).
- It has three different vertical resolutions:
 - **Standard:** 98 lines per inch (3.85 lines/mm)
 - **Fine:** 196 lines per inch (7.7 lines/mm)
 - **Super fine** (not officially a Group 3 standard, but fairly common): 391 lines per inch (15.4 lines/mm)
- It can transmit at a maximum data rate of 14,400 bits per second (bps), and will usually fall back to 12,000 bps, 9,600 bps, 7,200 bps, 4,800 bps or 2,400 bps if there is a lot of noise on the line.

The fax machine typically has a CCD or photo-diode sensing array. It contains 1,728 sensors (203 pixels per inch), so it can scan an entire line of the document at one time. The paper is lit by a small fluorescent tube so that the sensor has a clear view.

~~f="http://www.howstuffworks.com/digital-camera3.htm">CCD or photo-diode contains 1,728 sensors (203 pixels per line) in an entire line of the document at once. The document is lit by a small fluorescent tube like this:~~



The scanning process: The scanner in a fax machine looks at one line of the sheet of paper. The scan line is shown here in red. It sees a group of black and white spots, shown blown up in the red rectangle at the bottom of the figure. It encodes the pattern of spots and sends them through the phone line.

The image sensor looks for black or white. Therefore, a single line of the document can be represented in 1,728 bits. In standard mode, there are 1,145 lines to the document. The total document size is:

$$1,728 \text{ pixels per line} * 1,145 \text{ lines} = \text{approximately 2,000,000 bits of information}$$

To reduce the number of bits that have to be transmitted, Group 3 fax machines use three different compression techniques:

- Modified Huffman (MH)
- Modified Read (MR)
- Modified Modified Read (MMR)

See [Electronics Plus: Facsimile Theory](#) for a discussion of these compression types. The basic idea in these schemes is to look for "runs" of same-color bits. For example, if a line on the page is all white, the [modem](#) can transmit a dozen or so bits rather than the full 1,728 bits scanned for the line. This sort of compression can cut transmission time by a factor of at least two, and for many documents much more. A document containing a significant amount of white space can transmit in just a few seconds.

Receiving the Fax

The bits for the scanned document travel through the phone line and arrive at a receiving fax machine. The bits are **decoded, uncompressed and reassembled** into the scanned lines of the original document. There are five common ways to print the fax, depending on the type of machine that receives it:

- **Thermal paper** - When fax machines started infiltrating offices en masse in the 1980s, most of them used thermal paper. The paper is coated with chemicals that react to heat by turning black. Thermal paper has several big advantages:
 - It is very inexpensive to build a thermal printer.
 - Thermal printers have no moving parts except for the paper-feed mechanism.
 - There are no expendables like ink or ribbons because the paper contains the ink.

- Thermal printers are nearly indestructible.

The only disadvantage is that the paper discolors over time, and it turns completely black if you leave it in a hot car.

- **Thermal film** - Thermal film uses a page-width ribbon that contains ink that melts onto paper when heated. This is more complicated mechanically than thermal paper but less complicated than an inkjet.
- **Inkjet** - This technique uses the same mechanism as an [inkjet printer](#).
- **Laser printer** - This technique uses the same mechanism as a [laser printer](#).
- **Computer printer** - The fax is actually received by a **fax modem** (a modem that understands the Group 3 data standards), stored on the computer's hard disk as a graphics file and then sent to the computer's usual printer.

For more information on fax machines and related topics, check out the links on the next page.

Lots More Information

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Field Investigations and Fraud Prevention Program

Storage of Agent Sales Reports, Supporting Documents, and Sales Summaries on Microfiche/Microfilm or other Optical Storage Media

Section XIV of the Agent Reporting Agreement requires each ARC Agent to retain, for at least two years, a duplicate copy of each weekly sales report and all supporting documents, (i.e., the agent coupons, RENs, credit card charge forms, settlement authorization forms, calculator tapes, computer print-outs, sales summaries, voids, and other supporting documents). Most Agents satisfy this contractual requirement by maintaining these required documents in the agency location in "hard copy" paper form.

As an alternative to maintaining the sales report and supporting documents in paper format, an Agent may, upon prior written notice to, and written approval by ARC, maintain the required documents on microfiche/film or on an optical storage medium as specified below, under the following conditions.

- (1) The sales reports and all supporting documents must be copied to microfiche/film or to a non-magnetic optical medium that uses a "write-once, read-many" technology which will prevent overwriting the stored data (e.g., WORM technology). Certain non-volatile storage medium, such as CD-ROMs, optical disks, DVDs, and laserdisks, may be determined to be acceptable storage media. However, computer hard drives, zip drives, floppy disks, magnetic tape, and other magnetic media are NOT acceptable.
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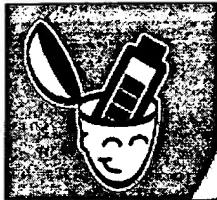
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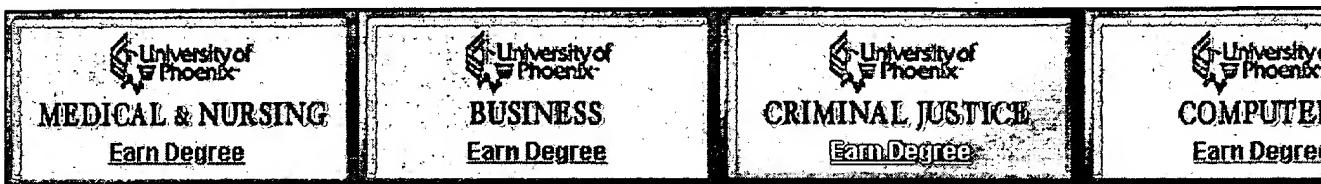
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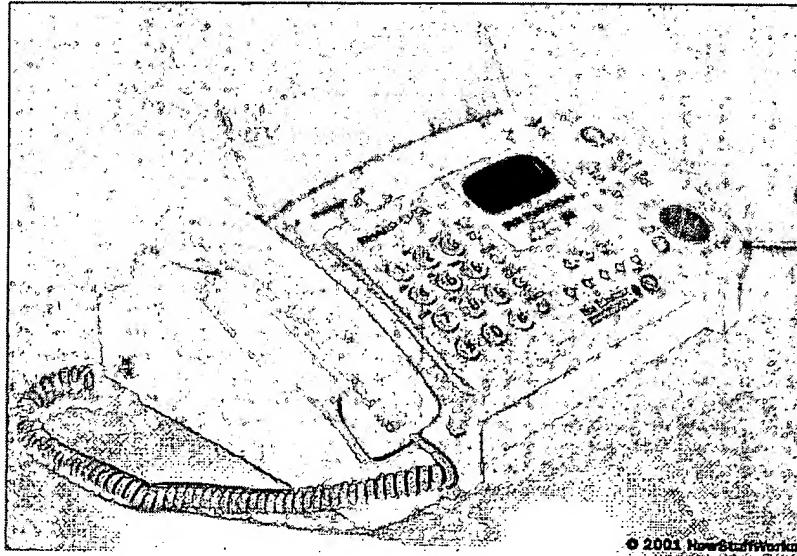
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How Fax Machines Work

by [Marshall Brain](#)

You can walk into nearly any office in the United States today, big or small, hi-tech or lo-tech, and you will find a fax machine. Connected to a normal phone line, a fax machine allows you to transmit pieces of paper to someone else instantly! Even with FedEx and e-mail, it is nearly impossible to do business without one of these machines today.



In this article, you'll learn how a fax machine works its magic!

The Basic Idea

Fax machines have been around in one form or another for more than a century – Alexander Bain patented the first fax design in 1843 (see [Science Line: Alexander Bain & the Fax Machine](#) to learn more). If you look back at some of the early designs, you can get a very good idea of how they work today.

EXHIBIT 3

Most of the early designs involved a **rotating drum**. To send a fax, you would attach the piece of paper to the drum, with the print facing outward. The rest of the machine worked something like this:

- There was a small photo sensor with a lens and a light.
- The photo sensor was attached to an arm and faced the sheet of paper.
- The arm could move downward over the sheet of paper from one end to the other as the sheet rotated on the drum.

In other words, it worked something like a lathe.

The **photo sensor** was able to focus in and look at a very small spot on the piece of paper -- perhaps an area of 0.01 inches squared (0.25 millimeters squared). That little patch of paper would be either black or white. The drum would rotate so that the photo sensor could examine one line of the sheet of paper and then move down a line. It did this either step-wise or in a very long spiral.

To transmit the information through a phone line, early fax machines used a very simple technique: If the spot of paper that the photo cell was looking at were white, the fax machine would send one tone; if it were black, it would send a different tone (see How Modems Work for details). For example, it might have sent an 800-Hertz tone for white and a 1,300-Hertz tone for black.

At the receiving end, there would be a similar rotating-drum mechanism, and some sort of **pen** to mark on the paper. When the receiving fax machine heard a 1,300-Hertz tone it would apply the pen to the paper, and when it heard an 800-Hertz tone it would take the pen off the paper.

Modern Fax Machines

A modern fax machine does not have the rotating drums and is a lot faster, but it uses the same basic mechanics to get the job done:

- At the sending end, there is some sort of **sensor** to read the paper. Usually, a modern fax machine also has a paper-feed mechanism so that it is easy to send multi-page faxes.
- There is some standard way to **encode** the white and black spots that the fax machine sees on the paper so that they can travel through a phone line.
- At the receiving end, there is a mechanism that **marks** the paper with black dots.

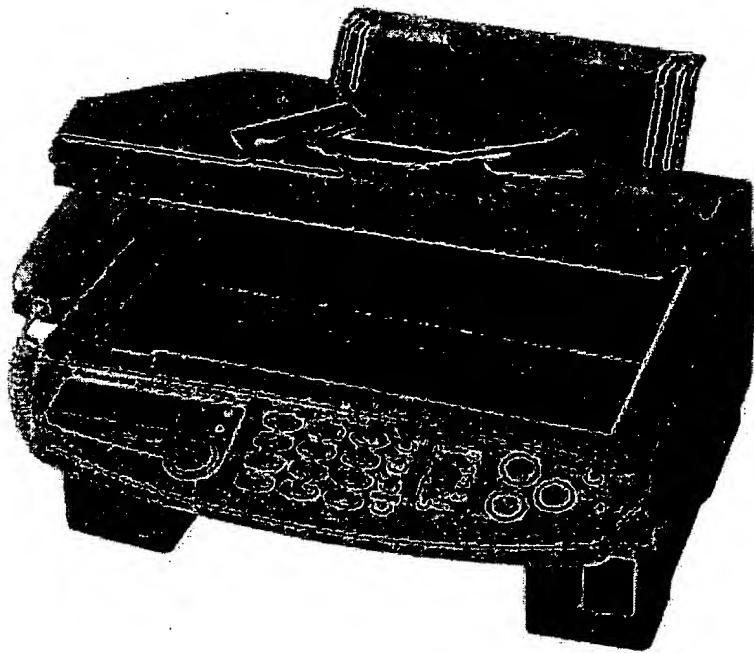


Photo courtesy [Panasonic and Matsushita Electric Corporation of America](#)
Panasonic KX-FB421 Fax/Copier machine

A typical fax machine that you find in an office is officially known as a **CCITT (ITU-T) Group 3 Facsimile machine**. The **Group 3** designation tells you four things about the fax machine:

- It will be able to communicate with any other Group 3 machine.
- It has a horizontal resolution of 203 pixels per inch (8 pixels/mm).
- It has three different vertical resolutions:
 - **Standard:** 98 lines per inch (3.85 lines/mm)
 - **Fine:** 196 lines per inch (7.7 lines/mm)
 - **Super fine** (not officially a Group 3 standard, but fairly common): 391 lines per inch (15.4 lines/mm)
- It can transmit at a maximum data rate of 14,400 bits per second (bps), and will usually fall back to 12,000 bps, 9,600 bps, 7,200 bps, 4,800 bps or 2,400 bps if there is a lot of noise on the line.

The fax machine typically has a CCD or photo-diode sensing array. It contains 1,728 sensors (203 pixels per inch), so it can scan an entire line of the document at one time. The paper is lit by a small fluorescent tube so that the sensor has a clear view.

<http://www.howstuffworks.com/digital-camera3.htm> CCD or photo-diode sensor 1,728 columns * 203 pixels per line. The document is lit by a small fluorescent tube like this:

<http://www.howstuffworks.com/quantum-mechanics1.htm>


The scanning process: The scanner in a fax machine looks at one line of the sheet of paper. The scan line is shown here in red. It sees a group of black and white spots, shown blown up in the red rectangle at the bottom of the figure. It encodes the pattern of spots and sends them through the phone line.

The image sensor looks for black or white. Therefore, a single line of the document can be represented in 1,728 bits. In standard mode, there are 1,145 lines to the document. The total document size is:

$$1,728 \text{ pixels per line} * 1,145 \text{ lines} = \text{approximately 2,000,000 bits of information}$$

To reduce the number of bits that have to be transmitted, Group 3 fax machines use three different compression techniques:

- Modified Huffman (MH)
- Modified Read (MR)
- Modified Modified Read (MMR)

See [Electronics Plus: Facsimile Theory](#) for a discussion of these compression types. The basic idea in these schemes is to look for "runs" of same-color bits. For example, if a line on the page is all white, the modem can transmit a dozen or so bits rather than the full 1,728 bits scanned for the line. This sort of compression can cut transmission time by a factor of at least two, and for many documents much more. A document containing a significant amount of white space can transmit in just a few seconds.

Receiving the Fax

The bits for the scanned document travel through the phone line and arrive at a receiving fax machine. The bits are **decoded, uncompressed and reassembled** into the scanned lines of the original document. There are five common ways to print the fax, depending on the type of machine that receives it:

- **Thermal paper** - When fax machines started infiltrating offices en masse in the 1980s, most of them used thermal paper. The paper is coated with chemicals that react to heat by turning black. Thermal paper has several big advantages:
 - It is very inexpensive to build a thermal printer.
 - Thermal printers have no moving parts except for the paper-feed mechanism.
 - There are no expendables like ink or ribbons because the paper contains the ink.

- Thermal printers are nearly indestructible.

The only disadvantage is that the paper discolors over time, and it turns completely black if you leave it in a hot car.

- **Thermal film** - Thermal film uses a page-width ribbon that contains ink that melts onto paper when heated. This is more complicated mechanically than thermal paper but less complicated than an inkjet.
- **Inkjet** - This technique uses the same mechanism as an inkjet printer.
- **Laser printer** - This technique uses the same mechanism as a laser printer.
- **Computer printer** - The fax is actually received by a **fax modem** (a modem that understands the Group 3 data standards), stored on the computer's hard disk as a graphics file and then sent to the computer's usual printer.

For more information on fax machines and related topics, check out the links on the next page.

Lots More Information

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- Thermal paper
- A Short Research Project into the Permanence of Thermal Fax Papers

IN THE UNITED STATES PATENT OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex Parte Rodger Burrows

**Appeal No. 2004-2110
Application No. 09/910,654**

**DECLARATION OF APPLICANT RODGER BURROWS IN SUPPORT OF
THE REQUEST TO REOPEN PROSECUTION**

1. My name is Rodger Burrows, I reside at 2 Redwood Circle, Plantation Fl 33317. I am the inventor of the above referenced application.
2. My experience and expertise forms part of this Declaration
3. On or about October 15, 2000 I learned that ARC (Airline Reporting Corporation) was considering the elimination of paper copies of travel agent coupons. However, ARC required that the agent coupon be stored on microfiche/film or on a non-magnetic type of optical storage. ARC was emphatic in that they did not want the data associated with the agent coupon to be stored; they wanted an actual image of the agent coupon to be stored as stated in the IAH.
4. Based on my previous development of computer software for the travel industry and my substantial computer skills, I began to investigate the requirements announced by ARC. I realized that the procedure required by ARC first required an image of an agent coupon to be printed as in the past because that is the only way the travel agent reservation system worked, then the coupon had to be scanned and optically stored. I further realized that this required procedure allowed the travel agent to throw away the printed copy of the agent coupon but in reality required more effort by the travel agent to scan and then store the optical image of the agent coupon. The onus was also put on the travel agent to determine how to set up the particular optical storage he was going to use and how he was going to retrieve a single agent coupon among the many he had to optically store. That is why ARC also required the travel agent to submit his procedure to ARC for approval. Based on my considerable computer skills and detailed knowledge of the travel agent business and the computer capabilities of most travel agents, it is my belief that very few travel agents actually went to optical storage. Thus ARC's proposal created more work by requiring the printing then scanning on to microfiche the image of the coupon, as well as the need to devise a system that ARC would approve. Once the coupon is copied it

EXHIBIT 4

can be discarded however due to the nature of the document it must be disposed of in a secure and expensive manner. I knew there had to be a better way.

5. After learning of the problem announced by the ARC to be solved by travel agents, I began to investigate how a system referred to as the "Ticketing Control Program" I had begun to develop in 1997 and brought into use by 1999 could resolve this dilemma. However, my system would involve data storage and not image storage as required by ARC. Notwithstanding that ARC's proposal prohibited data storage to solve the problem, in my mind I knew this was a better way to achieve what ARC wanted to do and in doing so would eliminate the extra effort and work by the travel agent that accompanied ARC's proposed system. The problem was how to make my idea work and be acceptable to ARC. Even though my idea was to store coupon data, in the end I knew that I had to be able to somehow later retrieve the particular data associated with a particular transaction from all of the transactions that had occurred since the particular transaction occurred, and from it reconstruct an actual image of an agent coupon. I further realized that I had to work with the then existing travel agent reservation system.
6. While working on my idea, the thought came to me to somehow be able to use the coupon printing aspect of the then reservation system. One problem was that I could not cause any disruptions or interfere with the operation of the reservation system. My idea and the reservation system had to be able to work together and not interfere with each other.
7. After considering a number of approaches to the problem and discarding all of them, I concentrated on the printing aspect of the agent reservation system. I decided to the best way to solve the problem was to generate the agent coupon data by the reservation system while the airline ticket was being printed, extract the generated data and then operate on the generated and separated data so as to be able to store and identify individual agent coupon data among the many that would be generated using the reservation system; but, the I had to be able to retrieve the data from a particular transaction and reconstruct it in an actual image of an agent coupon. This unique method comprised my invention
8. My invention took my particular knowledge of the travel agency business and my significant computer skills to formulate my invention and know that it would work. Even though the level of skill of computer programmers is high, a, ordinarily skilled computer programmer would not have been able to formulate the steps to my invention because of a general lack of knowledge of the travel agency business and ARC's requirements. Even a computer programmer having my skills and given the problem to be solved would not have been able to formulate the steps to my invention because of his lack of knowledge of the travel agency business. Of course, once a competent and sufficiently skilled computer programmer was given the problem to be solved and my solution to the problem comprising the steps to my invention that programmer would have been able to develop the programs necessary to implement my invention. On the other hand the level of computer skills of an ordinary travel agent is quite low and therefore an ordinary travel agent would not have been able to even think of my invention let alone consider it obvious.

9. In order to prove that my invention would work, I developed a program to emulate the printer of a travel agency reservation system. For confidentiality reasons, and to assure myself that once my invention was disclosed, a competent computer programmer could generate the programs necessary to make my invention work, I hired out to other computer programmers various portions of the programs involved in the steps of my invention. No one programmer was given the entire steps to my invention. After the programs were completed, I combined the same in accordance with the steps of the invention. My invention worked. I had proven it and the fact that once given the steps to my invention and the problem to be solved, together with acquiring some knowledge of the operation of a typical travel agent reservation system, an ordinarily skilled programmer could make and use my invention with little experimentation, if any, once a patent on the same had expired.
10. It is to be noted, that in developing my invention, I had to use thinking that differed from the proposed system proposed by ARC. ARC only disclosed or proposed the problem to be solved by the use of optical storage of an exact image of the agent coupon. My invention proceeded in a completely different direction and did not include the disadvantages inherent in the proposed problem to be solved by ARC. Contrary to the direction envisioned by ARC, my invention involves the storage of data and not an image. Once I had disclosed my invention to ARC and demonstrated how it completely eliminated the printing of paper agent coupons and that an exact image of any agent coupon could be reconstructed from the stored data at a later time after many transaction had occurred, ARC was truly amazed and quickly approved the use of my invention.
11. After having disclosed my invention to ARC and shown that it worked, I later learned that ARC had subsequently and surreptitiously embarked upon a program to copy my invention and did so. It is known as Compass. That was the basis of making my invention special.

Statement Of My Skills

12. In 1984 after graduating from the Southern Ohio College in Fairfield Ohio with an associate's degree in computer science I trained myself in PC computer software. This was necessary due to the fact that at the time colleges were only teaching mainframe operation systems and languages. Specifically the language I first taught myself was called dBase II. This was a database language written in assembly that allowed for system calls to the computer OS and could be used both on MS DOS and the CP/M operating systems. Since the database language I was learning was portable to both of these operating systems it was necessary for me to train myself how to use them both. At the time there were no classes available to learn either the operating system or the computer languages. In fact once the college I graduated from found out that I know them they asked me to teach a course, which I did.
13. At the time the predominant operating system was produce by Digital Corporation however it was my belief that IBM PC's and MS DOS would

become a dominating factor in the future. (I wish that I would have had the money to buy stock then) I became an expert in the use of dBase II and created a company that sold accounting software written in the language and made custom modifications to the source code for my customers.

14. In 1989 I decided to move to Florida and began to seek employment there. The owner of a travel company was impressed with my computer skills and I was employed there until 1991 when I moved to another travel agency in south Florida. During my time at the first agency my experience included working as a IBM System 36 computer operator. Installation of STP's (satellite ticket printers) at remote customer sites. Training of employee's in the use of personal computers and the installation of PC computer software. When I moved to the second travel agency my responsibilities included being an AS/400 system operator. I was then also responsible for the implementation and oversight of all computers and software in the main agency and all 50 branches. This meant I had to be well versed in the implementation and maintenance of every computer related aspect of a travel agency.
15. In 1992 I started working as a consultant for a company that specialized in accounting software for travel agencies. I worked for that company until 1996 when I started my own company selling the accounting software myself. My close interaction with both large and small travel agencies gave me an unusual degree of detailed knowledge into the accounting and of necessity all aspects of the travel business. As you can imagine it was necessary for me to know exactly how the companies worked to be able to account for income and expenses.
16. In 1997 I began to look into the workings of the agent reservation system for the purpose of adapting the system to perform a function that it was not intended to do. I wanted to sequentially print tickets in accordance with a person's travel itinerary on a cruise. Since this is an area that had been of interest to me because of my computer skills and my travel agent experience, I became fairly well versed in how the reservation system worked. I began developing my Ticket Control Program and by the middle of 1999 it was ready to be put to use. The methods and systems employed in the Ticket Control Program, in part, enabled me to solve the problem accomplished by my present invention. Without this previous knowledge, I am of the belief that my present invention would not exist. This previous knowledge allowed me to invent my claimed invention in the direction opposite to that envisioned by ARC.
17. Upon information and belief, there is no question in my mind and I am of the opinion, in view of my considerable computer skills, intimate knowledge of the travel business, and my detailed knowledge of the travel agent reservation system, that no one person of ordinary skill in the field of my invention at the time of my invention, would have considered it obvious.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the

like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Rodger Burrows 3-25-05
Rodger Burrows Date

the Board's is erroneous. In view of the only supportable interpretation of the ARC disclosures, the facsimile and multi media networking references cited by the Board are totally inapplicable or at the very best apply to one step of the Applicant's claimed invention, as explained above. In either event, the combination of the references do not teach or suggest Applicant's claimed invention; or in the alternative do not address Applicant's invention as a whole. Accordingly, the Applicant has rebutted the Board's determination of the scope and content of the prior art. Applicant has also shown that the differences between the prior art and the claimed invention do not support a finding of obviousness, see the above. (Applicant still maintains that the Board has not shown any authority to support a different conclusion, as explained above).

In its decision, the Board has not made any attempt to determine the factor regarding the level of ordinary skill in the art. Attached hereto as Exhibit 4 is a declaration of the Applicant that shows the history of his invention and that his level of skill in the art is superior to one of ordinary skill and.

The attached copies of the pertinent portion of the 2005 IAH (Exhibit 2) reveals that ARC is still disclosing the need to optically capture the image of the agent coupon as did the 2000 IAH (Exhibit 1) at the time of the application. Thus, it is shown that ARC and others, other than Applicant, have failed to make Applicant's invention for over 5 years based on ARC's disclosures. Even if the level of skill in the art is considered high, the failure of others to make Applicant's invention for at least 5 years based on ARC's disclosures evidences that a person of ordinary skill has not considered Applicant's invention obvious. That Applicant's invention has satisfied a long felt need is also shown by the years apart statements by ARC regarding the same optical storage of the image of the agent coupon disclosures by ARC.

Accordingly, a full and supportable determination of the Graham V. John Deere factors, as advanced herein leads to the only conclusion that Applicant's invention when taken as a whole, without the prohibited use of hindsight, was not obvious to a person of ordinary skill in the art to which the invention pertains, at the time of the application.

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